DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Indian Health Service

Refer to: OEHE

ALBUQUERQUE AREA INDIAN HEALTH SERVICE CIRCULAR NO. 94-02

RECOVERY OF PRECIOUS METALS AND CRITICAL MATERIALS

Sec.

1. Purpose
2. Policy
3. Responsibilities
4. Guidelines
5. Disposition
6. Annual Report
7. References
8. Effective Date

Exhibits

1. PURPOSE.

This circular provides direction and guidance on the recovery of precious metals throughout the Albuquerque Area Indian Health Service (AAIHS), in accordance with the Federal Property Management Regulations, Subpart 101-42.3, HHS Material Management Manual, Subchapter 103-42.3 and Public Health Service supplements hereto.

2. POLICY.

It is mandatory policy that all service units/facilities within the AAIHS generating precious metal bearing materials participate in the Precious Metals Recovery Program (PMRP). Precious metals and critical materials designated for recovery includes gold, silver, dental amalgam, and metals in the platinum family.

3. RESPONSIBILITIES.

All AAIHS activities shall recover precious metals. Used hypo solution, scrap films, and scrap dental amalgam/metals shall be recovered regardless of the amount of scrap generated.

A. The Director, Division of Property and Supply Management (DPSM), AAIHS is designated as the Area Precious Metals Monitor (APMM).

Distribution: All Indian Health Service Manual Holders
Date: November 15, 1993

The APMM shall:

1) Coordinate with the PMRP's Field Support Representative, (505) 846-6655/846-6959 for the following equipment and services:

   - Passive cell silver collectors (systems) for dental and medical x-ray machines within the Area.
   - Training of personnel in the proper maintenance of passive cell systems.
   - Printed brochures on the PMRP and instruction booklets for the passive cell systems.

2) Determine most economical method of recovery and/or disposal, if PMRP determines that it is no longer cost effective to recover a particular type of scrap e.i. dental amalgam scarp.

3) Conduct and coordinates surveys on annual basis.

4) Implement and provide guidance.

5) Submit reporting data as required.

6) Submit a updated listing, of the personnel who are the points of contact within the area, to the PMRP by the first week of February each year.

B. Service Unit Director(s) will:

1) Designate the Service Unit Precious Metal Coordinator(s) (SUPMC) in writing. APMM will be notified of appointees in writing each year during the first week of January and any changes will be reported within 30 days.

   SUPMC and the Property Custodial Officer (PCO) will:

   a. Implement established procedures.

   b. Provide security measures and accountability for collected precious metals.

   c. Dispose of accumulated precious metals in accordance with this circular.

   d. Submit required reporting data.

   e. Make semiannual inspections of the silver collection systems and ensure that they are working properly.

f. Submit sample(s) as needed from each of the medical x-ray systems to a qualified laboratory for silver content. See Exhibit A.

g. Take corrective action by inspecting and having the silver collection unit (s) serviced or changed if the laboratory results are above the EPA standard of 5 milligrams per liter mg/1 for silver.

2) Ensure that the passive cell silver collection systems are properly installed and maintained by:

a. Having Service Unit's biomedical personnel install the original collection system in dental and medical x-ray developer fixer waste streams. Note: The plumbing system after it leaves the collector must be provided with a means of collecting samples of the waste stream for sampling.

b. Requiring that facilities maintenance maintain, repair, and changes out the core(s), dental cartridges, and passive cell systems, as needed.

c. Verify that the x-ray technicians are testing the fixer waste (in-house) down stream of the collector system twice a month and logging the results. See Exhibit B.

4. **GUIDELINES FOR RECOVERY OF PRECIOUS METALS.**

The basic factors that determine the potential quantity of recoverable precious metals are:

A. The amount of film processed, hypo solution used, and scrap film generated.

B. The amount and type of scrap dental amalgam/metals created.

(1) Hypo Solution

a. Used hypo solution will be processed to recover the maximum amount of silver from the solution. Installation of a silver recovery unit consistent with the quantity of used hypo solution generated will be completed by the end of 1993. Passive cell systems are available which permit economic silver recovery from both large and small quantities of used hypo solutions.

b. A recovery cartridge/core accomplishes metallic replacement. A more active metallic element in the filter (usually iron or copper) reacts with silver thiosulfate complex. These cartridge/ core(s) are control by serial numbers. Monitoring (in-house) of medical x-ray core(s) requires a simple test (see Exhibit B.) to determine when the core(s) need to be changed. Core(s) and dental cartridges should be changed after processing 180-200 gallons of hypo or after 12 months, whichever occurs first.

(2) Silver from Scrap Film

Scrap film, the silver content of which varies according to the type of film and degree of exposure and outdated film offer opportunity for silver recovery.

(3) Precious Metals from Dental Care Operations

Scrap gold, silver, platinum and amalgam in the form of clippings, small pieces, filing, etc., are subject to the PMRP.

a. Dental staff shall be informed of their responsibilities and legal liabilities by the SUPMC.

b. Scrap dental alloy will be collected by dental personnel in all facilities.

c. Scrap shall be stored in a manner which meets the environmental health standards.

d. Separate records shall be maintained for each type of scrap accumulated.

e. Dental staff will ensure that the 1) dental x-rays developer is equipped with a dental silver recovery cartridge located in the waste stream of the fixer solution and that the 2) cartridges are changed annually by service unit's maintenance department.

f. Dental staff within the service unit will coordinate with the SUPMC for the collection of their precious metals scrap.

5. **DISPOSITION.**

A. Under the direction of the SUPMC, scrap silver recover from hypo solution, dental amalgam, gold and platinum shall be weighed and shipped to AAIHS-DPSM.

B. Scrap x-ray film is to be packed in cartons of sixty (60) pounds maximum weight. Upon accumulation of three hundred (300) pounds total weight (5 carton) must be shipped out.

C. Shipment or delivery is to be made and arranged with the Albuquerque Area DPSM, Albuquerque, New Mexico, (505) 761-4688.

6. **ANNUAL REPORT.**

Area's APMM will prepare the prescribed Annual Precious Metal Recovery Report at the end of each fiscal year and forward the report to IHS Headquarters West, Property Management Branch, Albuquerque, New Mexico.

7. **REFERENCES.**

A. Federal Property Management Manual, subchapter 103-42.3 and PHS or HRSA supplements.

B. Inter-Service Agreement between the IHS and Department of Defense SC4400-91159-003 thru 6\97.

C. Silver Recover Requirements - 1981, DPSM.

D. Environmental Protection Agency - 40 CFR 261.24, D 011, New Mexico Hazardous Waste Regulation are the same as EPA's.

8. **EFFECTIVE DATE.**

This circular is effective upon date of signature.

Josephine T. Waconda
Assistant Surgeon General
Area Director
Albuquerque Area Indian Health Service

YEARLY LABORATORY EVALUATIONS:

1. Cartridge/core(s) are to be changed after processing 100-200 gallons of hypo or after 12 months, whichever occurs first.

2. SUPMC will collect and send to a qualified laboratory, samples from the medical x-ray fixer discharge line after it leaves the silver collector system 1) once a year, after a core is changed, or 2) when a system is replaced.

3. The following sampling procedure will be followed:

   A. A sample will be collected after 10 - 30 days of use when a core has been changed or a system replaced.

   B. A sample will contain approximately 125 ml and is usually collected in a plastic bottle. The amount and type of container will be determined by the laboratory selected to analyze the sample.

   C. The turn around time for a sample submitted to a laboratory is about five ()5 working days.

4. The following is a list of some, but not all, qualified laboratories:

   A. Analytics Laboratory, Industrial Hygiene
   Roche Analytics Laboratory
   P.O. Box 25249
   Richmond, Virginia 23260
   (800) 888-8061

   B. Analytical Technologies, Inc.
   2709-D Pan American Freeway, NE
   Albuquerque, NM 97107
   (505) 344-3777

   C. ASSAIGAI Analytical Laboratories
   7300 Jefferson, NE
   Albuquerque, NM 87109
   (505) 345-8964

   D. Data Chem Laboratories
   960 West LeVoy Drive
   Salt lake City, UT 84123-2547
   (801) 266-7700

1. (IN-HOUSE TESTING)

X-ray personnel are to test the waste stream twice a month and log the result as follows:

A. Procure a 4 to 8 inch piece of copper tubing or flat stock from maintenance.

B. Shine the outside of the tubing or both sides of the stock using steel wool or sandpaper.

C. Obtain a sample of the discharge from the silver collector in a plastic cup. (About two inches of liquid is required.)

D. The test will take about twenty seconds to complete.

(1) Dip the copper about one inch into the solution for ten seconds.

(2) Move the copper down to the bottom of the cup - again leave it for ten seconds.

E. The results are as follows:

(1) No difference between any of the copper 0 - 5 mg/l.

(2) Color change at bottom of copper 5 -20 mg/l.

(3) Color change at bottom and second stage over 20 mg/l.

F: Action Required:

(1) No action required, system working well.

(2) System is almost filled with silver and the core needs to be replaced.

(3) System is completely full. The core needs to be replaced.